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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/501,886

07/20/2004

Kenichi Kajiwara

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38834 7590 12/19/2006
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EXAMINER

NGUYEN, NINH H

ART UNIT

PAPER NUMBER

3745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

12/19/2006

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/501,886	Applicant(s) KAJIWARA ET AL.	
	Examiner Ninh H. Nguyen	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 July 2004 and 27 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

This is in response to the Request for Continued Examination dated 18 October 2006.

Withdrawal of Finality

The Office Action mailed 20 November 2006 was inadvertently made final. As a result, the November 20 2006 Office Action is hereby vacated and this Office Action is outstanding.

Response to Arguments

1. Applicant's arguments with respect to claims 1-6 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang (5,328,332) in view of Guida et al. (5,336,050).

Chiang discloses an impeller (Figs. 4-10) having a disk-like main plate 2, a blade 12 joined to said main plate, and a side plate 13 having a suction port, a hole 21 is formed in a central portion of said main plate for attaching the impeller to a drive shaft (Fig. 9), wherein a step portion is formed around the hole (Fig. 9), said step portion constituting means 24 and 25

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for forming a gap so that when a plurality of main plates are piled on one another, said gap is formed by only contacting said step portions of adjacent main plates to each other to thereby prevent said adjacent main plates from being adhered to each other; and a radially inner end portion of the blade which is joined to the main plate is rounded near a portion at which the blade is joined to the main plate (Fig. 9).

However, Chiang does not disclose a boss hole formed in the central portion of the main plate for attaching a boss which engages with a drive shaft as claimed.

Guida et al. teach a centrifugal fan (Fig. 4) comprising a main plate 15, a plurality of blades 19 attached to the main plate, a side plate 17, a boss hole formed in the central portion of the main plate for attaching a boss 23 to the main plate by a bolts 33.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the impeller of Chiang with a separate boss attached to a boss hole formed in the central portion of the main plate as an expedience to attach the impeller to the drive shaft.

Regarding claim 2, Chiang in view of Guida discloses all the limitations except the gap is not set to be in the range of 0.3mm to 0.4mm as claimed.

Since the applicant has not disclosed that having the gap being set in the range of 0.3mm to 0.4 mm solves any stated problem or is for any particular purpose above the fact that the gap is formed when a plurality of main plates, each with a step portion formed around the boss hole, stacked one on top of another, and it appears that the modified impeller of Chiang would perform equally well with the gap dimension as defined claimed by applicant, it would have been an

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obvious matter of design choice to modify the modified impeller of Chiang by utilizing the specific gap dimension as claimed.

Regarding claims 7 and 8, the modified impeller of Chiang in view of Guida shows all the limitations including the fact that the side plate is cast from plastic or metal. However, the main plate of the modified impeller is not a single piece of molded metal as claimed.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the modified fan of Chiang with the main plate being cast from a metal as an expedience to form the main plate.

4. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiang in view of Guida et al. as applied to claims 1 and 3 above and in further view of Brock (2,228,750).

Chiang in view of Guida et al. discloses all the limitations except the fan is not a multistage fan as claimed.

Brock teaches a multistage centrifugal fan (Fig. 2) comprising a plurality of fan stages for increasing suction of the fan (page 4, left column, lines 46-49), each fan stage comprising an impeller 35 housed in respective intermediate casing and a shaft 24 supporting the impellers.

It would have been obvious to a person having ordinary skill in the art at the time the invention was made, to make the modified fan of Chiang with a multistage configuration for the purpose of increasing suction of the fan as taught by Brock.

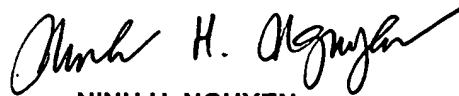
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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Ninh Nguyen whose telephone number is (571) 272-4823. The examiner can be normally reached on Monday-Friday from 7:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look, can be reached at (571) 272-4820. The fax number for this group is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, please go to <http://pair-direct.uspto.gov> or contact the Electronic Business center (EBC) at 866-217-9197 (toll-free).



NINH H. NGUYEN
PRIMARY EXAMINER

Nhn
December 11, 2006